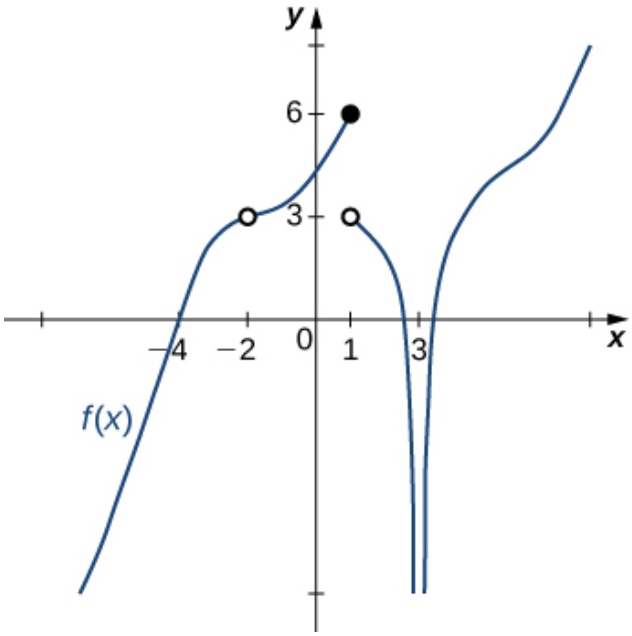
1. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x) = -\infty$.



A. $-\infty$

B. 3

C. -2

D. Multiple a make the statement true.

E. No a make the statement true.

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2. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to 4^-} \frac{-1}{(x-4)^4} + 7$$

A. ∞

B. $-\infty$

C. $f(4)$

D. The limit does not exist

E. None of the above

3. Evaluate the limit below, if possible.

$$\lim_{x \to 8} \frac{\sqrt{6x - 32} - 4}{4x - 32}$$

A. 0.188

B. ∞

C. 0.612

D. 0.125

E. None of the above

4. Based on the information below, which of the following statements is always true?

As x *approaches* 4, $f(x)$ *approaches* 2.891.

A. $f(4)$ is close to or exactly 2

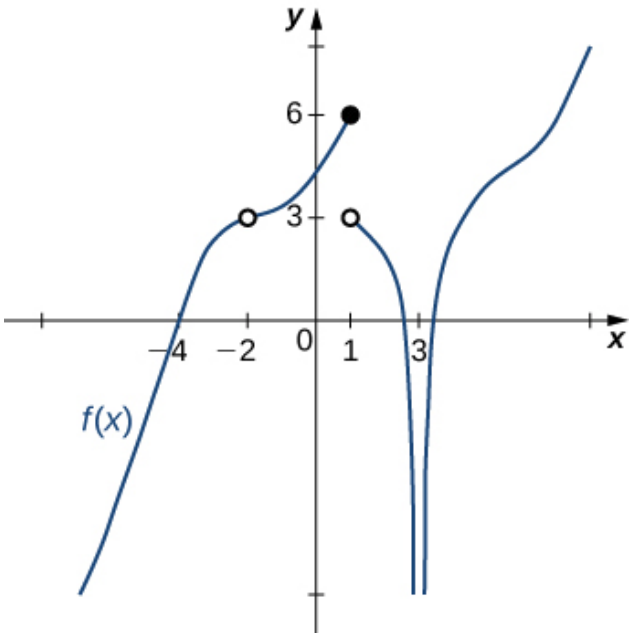
B. $f(2)$ is close to or exactly 4

C. $f(2) = 4$

D. $f(4) = 2$

E. None of the above are always true.

5. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x)$ does not exist.



A. 1

B. 3

C. -2

D. Multiple a make the statement true.

E. No a make the statement true.

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6. Evaluate the limit below, if possible.

$$\lim_{x \to 8} \frac{\sqrt{7x-7}-7}{5x-40}$$

A. 0.529

B. 0.014

C. ∞

D. 0.071

E. None of the above

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7. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to -4^-} \frac{7}{(x+4)^3} + 5$$

A. $f(-4)$

B. ∞

C. $-\infty$

D. The limit does not exist

E. None of the above

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8. To estimate the one-sided limit of the function below as x approaches 9 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{9}{x} - 1}{x - 9}$$

A. $\{8.9000, 8.9900, 8.9990, 8.9999\}$

B. $\{9.1000, 9.0100, 9.0010, 9.0001\}$

C. $\{9.0000, 9.1000, 9.0100, 9.0010\}$

D. $\{8.9000, 8.9900, 9.0100, 9.1000\}$

E. $\{9.0000, 8.9000, 8.9900, 8.9990\}$

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9. To estimate the one-sided limit of the function below as x approaches 10 from the right, which of the following sets of numbers should you use?

$$\frac{\frac{10}{x} - 1}{x - 10}$$

A. $\{10.0000, 9.9000, 9.9900, 9.9990\}$

B. $\{10.1000, 10.0100, 10.0010, 10.0001\}$

C. $\{9.9000, 9.9900, 10.0100, 10.1000\}$

D. $\{9.9000, 9.9900, 9.9990, 9.9999\}$

E. $\{10.0000, 10.1000, 10.0100, 10.0010\}$

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10. Based on the information below, which of the following statements is always true?

As x *approaches* 0, $f(x)$ *approaches* 10.544.

A. $f(x)$ is close to or exactly 10.544 when x is close to 0

B. $f(x)$ is close to or exactly 0 when x is close to 10.544

C. $f(x) = 10.544$ when x is close to 0

D. $f(x) = 0$ when x is close to 10.544

E. None of the above are always true.
